

Revised (11/2000)

Summary of Testing, Monitoring,
Recordkeeping and Reporting Requirements
Of 40 CFR 63 Subpart CC

Petroleum Refineries NESHAP

[This document includes all rule amendments adopted through November 2000]

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Table 1-1. Petroleum Refinery NESHAP General Requirements

Item	Requirement	Section	Frequency
Testing	Notify the regulatory authority 30 days prior to conducting a performance test (if a test is required - see process vent tables).	63.642(d)(2)	Once
	Conduct tests at representative operating conditions that result in the lowest emission reduction.	63.642(d)(3)	N/A
Monitoring	See tables for each kind of emission point.		
Reporting	<u>Permit Application</u> An owner or operator subject to the provisions of the petroleum refinery NESHAP must apply for a part 70 or part 71 permit.	63.642(a)	Once (and as directed by the permit)
	<u>Application for Approval of Construction or Reconstruction</u> Applies to new or reconstructed sources only, general application requirements include the following: <ul style="list-style-type: none"> ⊆ applicant's name and address; ⊆ notification of intention to construct a new major affected source; ⊆ address of source; ⊆ identification of relevant standards; ⊆ expected commencement date of construction or reconstruction; ⊆ expected completion date of construction or reconstruction; ⊆ anticipated date of startup; and ⊆ applicability determinations (e.g., distillation units, storage vessels, flexible operation units). ⊆ additional information may also be requested. 	63.5(d)	Once
	<u>Notification of Compliance Status (NCS)</u> Information required in a NCS report may be submitted in an operating permit application, in an amendment to an operating permit application, or as a separate submittal.	63.654(f)	Once
	The following information is required: <ul style="list-style-type: none"> ⊆ information on individual emission points to demonstrate compliance--see tables for each kind of emission point 	63.654(f)(1) and (f)(3)	

Table 1-1. Petroleum Refinery NESHAP General Requirements (Continued)

Item	Requirement	Section	Frequency
C	If initial performance tests are required, only one example complete test report for each test method used must be included in the NCS. For additional tests using the same method, submit the results rather than the full report.	63.654(f)(2)	
C	Results of any continuous monitoring system performance evaluations (if any emission points require continuous monitoring-- see process vents tables)	63.654(f)(4)	
C	The determination of applicability of subpart CC to process units that are designed and operated as flexible operation units. ^a	63.654(h)(6)(i)	
C	The determination of applicability of subpart CC to any storage vessels for which use varies from year to year. ^a	63.654(h)(6)(ii)	
C	The determination of applicability of subpart CC to any distillation column for which use varies from year to year. ^a	63.654(h)(6)(iii)	
	<p><u>Periodic Report</u> If no compliance exceptions occur in the 6 month reporting period, a periodic report is not necessary, unless (1) emissions averaging is used, (2) a Group 1 emission point becomes a Group 2 emission point, (3) a new Group 1 emission point is added, or (4) a floating roof storage vessel is brought into compliance.^a</p> <p>Periodic reports must include information on compliance exceptions (see tables for each kind of emission point).</p>	63.654(g)	Semi-annual (if there is a compliance exception). Quarterly for points in emissions averages.
	If a performance test is done for an emission point that is added or changed from Group 2 to Group 1, include the results (e.g., percent emissions reduction or concentration) in the next periodic report.	63.654(g)(7)	Once
	If a Group 2 emission point becomes a Group 1 emission point or a new Group 1 emission point is added, include the Notification of Compliance Status report in the next periodic report. ^a Refer to tables 2 through 7 for the type of information that is to be included for each kind of emission point.	63.654(f)(6)	

Table 1-1. Petroleum Refinery NESHAP General Requirements (Continued)

Item	Requirement	Section	Frequency
	If a floating roof storage vessel is brought into compliance, include the Notification of Compliance Status report for the vessel in the next periodic report. Include the method of compliance, a list of storage vessels subject to control requirements, and the anticipated and actual compliance dates.	63.654(f)(6) 63.654(f)(1)(i)(A)	
	<u>Startup, Shutdown, and Malfunction Report</u> A startup, shutdown, and malfunction report is not required if a malfunction does not occur during a reporting period. If a malfunction occurs and corrective actions are consistent with the startup, shutdown, and malfunction plan (SSMP) include a statement to that effect in the next periodic report.	63.654(h)(1), 63.10(d)(5)(i)	Semi-annual (if a malfunction has occurred)
	If a malfunction occurs and corrective actions are <u>not</u> consistent with the SSMP, submit in the next periodic report: <ul style="list-style-type: none"> - circumstances of the event; - the reasons for not following the startup, shutdown, and malfunction plan; and - whether any excess emissions and/or parameter monitoring exceedances occurred. 	63.10(d)(5)(ii)	Semi-annual (if a malfunction has occurred and the actions taken are not consistent with the SSMP)
	<u>Other Reports Required for Special Situations</u> The following information, if applicable, must be submitted with the Notification of Compliance Status report for existing sources or with the application for approval of construction for new sources:		Once (if applicable)
	C requests for approval to monitor an alternative control device operating parameter, with support justification ^b	63.654(h)(4)	
	The following information, if applicable, must be submitted 18 months before the compliance date for existing sources or with the application for approval of construction for new sources:	63.654(h)(4)	
	C requests for approval to monitor an alternative control device operating parameter, with supporting justification ^b		

Table 1-1. Petroleum Refinery NESHAP General Requirements (Continued)

Item	Requirement	Section	Frequency
	<ul style="list-style-type: none"> C requests for approval to use data compression systems instead of keeping hourly records, with supporting information^b 	63.654(h)(5)	
	<ul style="list-style-type: none"> C requests to use other alternative monitoring methods, with supporting justification^b 	63.654(h)(5)(iv) and 63.8(f)(4)(ii)	
	A request may be submitted to establish an alternative emission standard. A test plan or results of testing and monitoring must be submitted. (If the EPA finds that the alternative standard is equivalent to the NESHAP, the EPA will request public comment and publish a Federal Register notice allowing its use.)	63.6(g)(2)	
	<p><u>Request for Extension of Compliance</u></p> <p>Such requests are allowed only for existing sources and must be submitted at least 12 months before the compliance date (18 months if emissions averaging is used). The request must include:</p> <ul style="list-style-type: none"> C description of controls to be installed; C compliance schedule; and C interim emission control steps. 	63.6(i)(3)	Once (not required unless an extension of compliance is sought)
	<p><u>Application for a Performance Test Waiver</u></p> <p>An application for a waiver shall include information justifying the request (e.g., technical or economic infeasibility).</p>	63.7(h)(3)(iii)	Once (not required unless a performance test waiver is sought)
Recordkeeping	Records must be maintained for at least 5 years. Records must be accessible within 24 hours of request in either hard copy or computer-readable form.	63.642(e) and 63.654(i)(4)	N/A
	Maintain records of the occurrence and duration of each startup, shutdown, or malfunction of operation and each air pollution control equipment malfunction.	63.10(b)(2)(i-ii)	During each malfunction

Table 1-1. Petroleum Refinery NESHAP General Requirements (Continued)

Item	Requirement	Section	Frequency
	Maintain records of any actions that are inconsistent with the startup, shutdown, and malfunction plan; and records that demonstrate the plan has been followed.	63.10(b)(2)(iv-v)	During each malfunction
	Maintain records of continuous monitoring system calibration checks (if continuous monitoring is required).	63.10(b)(x)	After each calibration check

^aThis requirement represents a recent amendment (63 FR 44135, August 18, 1999) to the petroleum refineries NESHAP.

^bNot required unless a source wishes to use monitoring procedures different from those specified in the NESHAP.

Table 2-1. Requirements for Group 1 Miscellaneous Process Vents Routed to a Flare

Item	Requirement	Section	Frequency
Testing	An initial test showing compliance with Section 63.11(b), including measurement/determination of the following:	63.643(a)(1)	once
	C No visible emissions	63.116(a)	
	C Net heat value of combusted gas	63.11(b)	
	C Exit velocity		
Monitoring	Monitor the presence of a pilot flame. ^a	63.644(a)(2)	once/hr
	If vent stream could be diverted from control device by a bypass line:		
	C Monitor presence of flow in bypass line <u>OR</u>	63.644(c)(1)	once/hr
	C Inspect valve to bypass line to ensure that it is maintained in the closed position	63.644(c)(2)	once/month
Reporting	<u>Notification of Compliance Status (NCS)</u>		
	Identification of vent and method of compliance	63.654(f)(1)(ii)	once
	Report results of initial test, including:	63.654(f)(1)(iv)	once
	C Visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations		
	C A statement as to whether a flame was present over the full period of the compliance determination		
	If parameter other than presence of pilot flame is monitored, acceptable range for parameter and rationale for range.	63.654(f)(3)(ii)	once
	Times at which an operating day begins and ends	63.654(f)(3)(iii)	once
	<u>Semi-Annual Reports</u>		
	Report periods of excess emissions, including:	63.654(g)(6)(i)	Every 6 Months
	C an operating day when all pilot flames are absent		
C an operating day when the determination of the presence of a pilot flame is available for less than 75 percent of operating hours			
C periods when vent stream is diverted from the flare or when monthly inspections show bypass line valve has been open			

Table 2-1. Requirements for Group 1 Miscellaneous Process Vents Routed to a Flare (Continued)

Item	Requirement	Section	Frequency
Recordkeeping	Complete test report for initial test results	63.654(i)(2)	
	Each pilot flame presence determination	63.654(i)(3)(ii)(A)	
	Times and durations of periods when monitoring device is not operating	63.654(i)(3)(v)	
	Retain all information required to be reported for five years.	63.654(i)(4)	

^aA request may be made to monitor an alternate parameter.

^bIf all values of monitored parameter are within range reported in the NCS, may record that all values were within range instead of daily average values [63.654(i)(3)(iv)].

Table 2-2. Requirements for Group 1 Miscellaneous Process Vents Routed to an Incinerator

Item	Requirement	Section	Frequency
Testing	Initial performance test to show compliance with requirement to reduce organic HAP by 98% or to a concentration # 20 ppmv	63.645, 63.116 except (d) and (e)	once
Monitoring	Monitor the firebox temperature. ^{a,b}	63.644(a)(1)(i)	once/hr
	If vent stream could be diverted from control device by a bypass line: C Monitor presence of flow in bypass line <u>OR</u>	63.644(c)(1)	once/hr
	C Inspect valve to bypass line to ensure that it is maintained in the closed position.	63.644(c)(2)	once/month
Reporting	<u>Notification of Compliance Status (NCS)</u>		
	Identification of vent and method of compliance.	63.654(f)(1)(ii)	once
	Report results of performance test, including: C the percent reduction in organic HAP or TOC or the outlet organic HAP or TOC concentration	63.654(f)(1)(iii)	once
	C average firebox temperature ^a over the duration of the performance test		
	Acceptable range for daily average firebox temperature ^a and rationale for range	63.654(f)(3)(iii)	once
	Times at which an operating day begins and ends		
	<u>Semi-Annual Reports</u> Report periods of excess emissions, including: C an operating day that the average firebox temperature ^a was outside the range established in the NCS C an operating day when the firebox temperature ^a is available for less than 75 percent of operating hours.	63.654(g)(6)	Every 6 Months
C periods when vent stream is diverted from the incinerator or when monthly inspections show bypass line valve has been open.			

Table 2-2. Requirements for Group 1 Miscellaneous Process Vents Routed to an Incinerator (Continued)

Item	Requirement	Section	Frequency
Recordkeeping	Complete test report for initial performance test results	63.654(i)(2)	
	Each value of firebox temperature ^a or a block average of values for periods # 1 hour	63.654(i)(3)(ii)	
	Daily average of firebox temperature ^{a,c}	63.654(i)(3)(iii)	
	Times and durations of periods when monitoring device is not operating	63.654(i)(3)(v)	
	Retain all information required to be reported for five years.	63.654(i)(4)	

^aFor Catalytic Incinerators, monitor the gas stream temperature immediately before and after the catalyst bed and calculate temperature difference across the bed.

^bA request may be made to monitor an alternate parameter.

^cIf all values of monitored temperatures are within range reported in the NCS, may record that all values were within range instead of daily average values [63.654(i)(3)(iv)].

Table 2-3. Requirements for Group 1 Miscellaneous Process Vents Routed to a < 44 MW Boiler or Process Heater and not Introduced into the Flame Zone

Item	Requirement	Section	Frequency
Testing	Initial performance test to show compliance with requirement to reduce organic HAP by 98% or to a concentration # 20 ppmv	63.645, 63.116 except (d) and (e)	once
Monitoring	Monitor firebox temperature. ^a	63.644(a)(4)	once/hr
	If vent stream could be diverted from control device by a bypass line: C Monitor presence of flow in bypass line <u>OR</u>	63.644(c)(1)	once/hr
	C Inspect valve to bypass line to ensure that it is maintained in the closed position	63.644(c)(2)	once/month
Reporting	<u>Notification of Compliance Status (NCS)</u>		
	Identification of vent and method of compliance.	63.654(f)(1)(ii)	once
	Report results of performance test, including: C the % reduction in organic HAP or TOC, or C the outlet organic HAP or TOC concentration C average firebox temperature over the duration of the performance test	63.654(f)(1)(iii)	once
	Acceptable range for daily average firebox temperature and rationale for range. Times at which an operating day begins and ends.	63.654(f)(3)(iii)	once
	<u>Semi-Annual Reports</u>		
	Report periods of excess emissions, including: C an operating day that the average firebox temperature was outside the range established in the NCS C an operating day when the firebox temperature is available for less than 75 percent of operating hours C periods when vent stream is diverted from the boiler or when monthly inspections show bypass line valve has been opened	63.654(g)(6)	Every Six Months

Table 2-3. Requirements for Group 1 Miscellaneous Process Vents Routed to a < 44 MW Boiler or Process Heater and not Introduced into the Flame Zone (Continued)

Item	Requirement	Section	Frequency
Recordkeeping	Complete test report for initial performance test results	63.654(i)(2)	
	Each firebox temperature or a block average of values for periods # 1 hour	63.654(i)(3)(ii)	
	Daily average firebox temperature ^b	63.654(i)(3)(iii)	
	Times and durations of periods when monitoring device is not operating	63.654(i)(3)(v)	
	Retain all information required to be reported for five years.	63.654(i)(4)	

^aA request may be made to monitor an alternate parameter.

^bIf all values of firebox temperature are within range reported in the NCS, may record that all values were within range instead of daily average values [63.654(i)(3)(iv)].

Table 2-4. Requirements for Group 1 Miscellaneous Process Vents Introduced into the Flame Zone of a Boiler or Process Heater or Routed to a > 44 MW Boiler or Process Heater

Item	Requirement	Section	Frequency
Testing	Initial performance test is not required	63.645(d)	
Monitoring	Monitoring of process heater/boiler is not required.	63.644(a)(3)	
	For vent systems with a bypass line that could divert a vent stream away from the control device, monitor presence of flow in bypass line <u>OR</u>	63.644(c)(1)	once/hr
	Inspect closure mechanism on valve to bypass line to ensure that it is maintained in the closed position.	63.644(c)(2)	once/month
Reporting	<u>Notification of Compliance Status (NCS)</u> Identification of vent and method of compliance	63.654(f)(1)(ii)	once
	<u>Semi-Annual Reports</u> Periods when vent stream is diverted from the boiler or when monthly inspections show bypass line valve has been open		
Recordkeeping	Retain all information required to be reported for five years.	63.654(i)(4)	

Table 3-1. Requirements for Group 1 Storage Vessels Equipped With a Closed Vent System Routed to a Flare

Item	Requirement	Section	Frequency
Testing	A compliance determination, as specified in 63.11(b), is required for the flare. Include measurement/determination of the following: C Visible emissions, heat value of combusted gas and exit velocity	63.11(b)	once
Inspection	Inspect closed vent system as specified in 63.148.	63.148(c)	once/year
Reporting	<u>Notification of Compliance Status (NCS)</u> Identification of vessel and method of compliance. Report results of performance test, including: C Flare design (steam-assisted, air-assisted, non-assisted) C Visible emission readings, heat content determinations, flow rate measurements, and exit velocity determinations C Periods during compliance determination when the pilot flame is absent	63.654(f)(1)(i)(A) 63.654(f)(1)(i)(D)	once once
	<u>Periodic Reports</u> C description of routine maintenance anticipated for the flare in the next six months C description of the planned routine maintenance for the flare that was performed during the previous six months C description of each occurrence when the flare does not meet the requirements specified in 63.11(b) and reason for not meeting requirements	63.654(g)(5)(i)(A) 63.654(g)(5)(i)(B) 63.654(g)(5)(iii)	Every 6 Months Every 6 Months Every 6 Months
	Notify Administer 30 days in advance of refilling storage vessel that has been emptied and degassed. ^a	63.654(h)(2)(i)	not specified
	Notify Administrator 30 days in advance of refilling storage vessel that has been emptied and degassed. ^a	63.654(h)(2)(i)	not specified

Table 3-1. Requirements for Group 1 Storage Vessels Equipped With a Closed Vent System Routed to a Flare (Continued)

Item	Requirement	Section	Frequency
Recordkeeping	Group 1 determination, vessel dimensions, analysis of capacity	63.123(a)	
	Complete test report for initial test results	63.654(i)(3)(ii) 63.123(f)(2)	
	Planned routine maintenance performed, including:		
	C first time of day and date control requirements are not met at the beginning of the planned routine maintenance		
	C first time of day and date control requirements are met at the conclusion of planned maintenance	63.654(i)(3)(iii)	
	Retain all information required to be reported for five years.	63.654(i)(4)	

^aNotification may be made less than 30 days prior to inspection if inspection is unplanned [63.654(h)(2)(i)(B)]; State or local permitting authority can waive notification requirement or grant permission to refill sooner than 30 days after submission of notification [63.654(h)(2)(i)(C)].

Table 3-2. Requirements for Group 1 Storage Vessels Equipped With Closed Vent System Routed to a Control Device Other Than a Flare

Item	Requirement	Section	Frequency
Testing	For control device, design evaluation specified in 63.120(d)(1)(i) <u>OR</u> results of initial performance test described in 63.120(d)(1)(ii)	63.120(d)(1)	once
Inspection	Inspect closed vent system as specified in 63.148.	63.120(e)(5)	Every 12 months
Monitoring	Monitor parameter(s) proposed in the NCS to ensure that control device is being properly operated and maintained.	63.120(d)(2)	proposed in NCS
Reporting	<u>Notification of Compliance Status (NCS)</u>		
	Identification of vessel and method of compliance	63.654(f)(1)(i)(A)	once
	Description of parameter(s) to be monitored to ensure proper operation and maintenance of control device; explanation of parameter selection; frequency of monitoring	63.654(f)(1)(i)(B)	once
	Design evaluation documentation specified in 63.120(d)(1)(i) <u>OR</u>	63.654(f)(1)(i)(B)	once
	Results of performance test, including:	63.654(f)(1)(i)(B)	once
	C identification of storage vessel and control device		
	C identification of emission point(s) sharing control device		
	<u>Periodic Reports</u>		
	C description of routine maintenance anticipated for the control device in the next six months	63.654(g)(5)(i)(A)	Every 6 Months
	C description of the planned routine maintenance for the control device performed during the previous six months	63.654(g)(5)(i)(B)	Every 6 Months
	C description of each occurrence when the monitored parameters were outside the ranges established in the NCS	63.654(g)(5)(ii)	Every 6 Months
	Notify Administrator 30 days in advance of refilling storage vessel that has been emptied and degassed. ^a	63.654(h)(2)(i)	not specified

Table 3-2. Requirements for Group 1 Storage Vessels Equipped With Closed Vent System Routed to a Control Device Other Than a Flare
(Continued)

Item	Requirement	Section	Frequency
Recordkeeping	Group 1 determination, vessel dimensions, analysis of capacity	63.123(a)	
	Complete test report for initial performance test results	63.654(i)(3)(ii)	
	Measured values of monitored parameters	63.123(f)(1)	
	Planned routine maintenance performed, including:	63.123(f)(2)	
	C first time of day and date control requirements are not met at the beginning of the planned routine maintenance		
	C first time of day and date control requirements are met at the conclusion of planned maintenance	63.654(i)(3)(iii)	
	Retain all information required to be reported for five years.	63.654(i)(4)	

^aNotification may be made less than 30 days prior to inspection if inspection is unplanned [63.654(h)(2)(i)(B)]; State or local permitting authority can waive notification requirement or grant permission to refill sooner than 30 days after submission of notification [63.654(h)(2)(i)(C)].

Table 3-3. Requirements for Group 1 Storage Vessels Equipped With a Fixed Roof and an Internal Floating Roof

Item	Requirement	Section	Frequency
Inspection	<u>Single seal system</u> Visually inspect internal floating roof and primary seal through hatches.	63.120(a)(2)(i)	Every 12 months
	<u>Double seal system</u> Visually inspect internal floating roof, primary and secondary seal each time vessel is emptied and degassed and at least every five years <u>OR</u>	63.120(a)(3)(i)	Every 5 years
	Visually inspect internal floating roof and secondary seal through hatches <u>AND</u>	63.120(a)(3)(ii)	Every 12 months
	Visually inspect internal floating roof, primary and secondary seal each time vessel is emptied and degassed and at least every 10 years.	63.120(a)(3)(iii)	Every 10 years
Monitoring	No monitoring requirements apply to these vessels.		once/month
Reporting	<u>Notification of Compliance Status (NCS)</u> Identification of vessel and method of compliance	63.654(f)(1)(i)(A)	once
	<u>Periodic Reports</u> Results of each inspection in which a failure is detected. For annual inspections, a failure is as defined in 63.654(g)(2)(i)(A). For internal inspections, a failure is as defined in 63.654(g)(2)(ii)(A). Include the following:	63.654(g)(2)	Every 6 Months
	C date of inspection		
	C identification of storage vessel		
	C description of failure		
C nature and date of repair or date vessel was emptied			
	If extension is utilized, identify vessel, nature and date of repair or date storage vessel was emptied.	63.654(g)(2)(i)(C)	Every 6 Months
	Notify Administrator 30 days in advance of refilling storage vessel that has been emptied and degassed. ^a	63.654(h)(2)(i)	not specified

Table 3-3. Requirements for Group 1 Storage Vessels Equipped With a Fixed Roof and an Internal Floating Roof (Continued)

Item	Requirement	Section	Frequency
Recordkeeping	Group 1 determination, vessel dimensions, analysis of capacity	63.123(a)	
	Retain record of each inspection performed.	63.123(c)	
	If an extension is used, retain records required by 63.120(a)(4).	63.123(g)	
	Retain all information required to be reported for five years.	63.654(i)(4)	

^aNotification may be made less than 30 days prior to inspection if inspection is unplanned [63.654(h)(2)(i)(B)]; State or local permitting authority can waive notification requirement or grant permission to refill sooner than 30 days after submission of notification [63.654(h)(2)(i)(C)].

Table 3-4. Requirements for Group 1 Storage Vessels Equipped With an External Floating Roof

Item	Requirement	Section	Frequency
Inspection	Single seal system: measure gaps between vessel wall and primary seal.	63.120(b)(1)(ii)	Once/year
	Double seal system: measure gaps between vessel wall and primary seal during hydrostatic testing.	63.120(b)(1)(i)	Every 5 years
	Double seal system: measure gaps between vessel wall and secondary seal.	63.120(b)(1)(iii)	once/year
	Visually inspect external floating roof, primary and secondary seals and fittings each time vessel is emptied and degassed.	63.120(b)(10)	none specified
Monitoring	No monitoring requirements apply to these vessels.		
Reporting	<u>Notification of Compliance Status (NCS)</u>		
	Identification of vessel and method of compliance	63.654(f)(1)(i)(A)	once
	<u>Periodic Reports</u>		
	Results of each seal gap measurement in which the requirements of 63.120(b)(3),(4),(5)or(6) are not met. Include the following:	63.654(g)(3)(i)	Every 6 Months
	C date of seal gap measurement		
	C description of seal conditions that are not met		
	C nature and date of repair or date vessel was emptied		
	C raw data and calculations described in 63.120(b)(5) or (b)(6)		
If extension is utilized, identify vessel, nature and date of repair or date storage vessel was emptied .	63.654(g)(3)(ii)	Every 6 Months	
Documentation of any failures, as defined in 63.654(g)(3)(iii)(A), identified during a visual inspection. Include the following:	63.654(g)(3)(iii)	Every 6 Months	
C date of inspection, identification of storage vessel, description of failure and nature and date of repair			
Notify Administrator 30 days in advance of any gap measurement.	63.120(b)(9)	See Inspection	
Notify Administrator 30 days in advance of refilling storage vessel that has been emptied and degassed. ^a			

Table 3-4. Requirements for Group 1 Storage Vessels Equipped With an External Floating Roof (Continued)

Item	Requirement	Section	Frequency
Recordkeeping	Group 1 determination, vessel dimensions, analysis of capacity	63.123(a)	
	Retain record of each seal gap measurement, including date, raw data and calculations.	63.123(d)	
	If an extension is used, retain records required by 63.120(a)(4).	63.123(g)	
	Retain all information required to be reported for five years.	63.654(i)(4)	

^aNotification may be made less than 30 days prior to inspection if inspection is unplanned [63.654(h)(2)(i)(B)]; State or local permitting authority can waive notification requirement or grant permission to refill sooner than 30 days after submission of notification [63.654(h)(2)(i)(C)]

Table 4-1. Requirements for Group 1 Wastewater Streams

Item	Requirement	Section	Frequency
Testing	Comply with testing requirements found in 61.340 through 61.355 of 40 CFR part 61, subpart FF. If required, perform periodic measurement of benzene concentration in wastewater. There are no additional testing requirements.	63.647(c)	see 61.340 through 61.355
Monitoring	Comply with the monitoring requirements found in 61.340 through 61.355 of 40 CFR part 61, subpart FF. If required, monitor process or control device operating parameters. There are no additional monitoring requirements. ^a	63.647(c)	see 61.340 through 61.355
Reporting and Recordkeeping	Comply with provisions in 61.356 and 61.357 of 40 CFR part 61, subpart FF. There are no additional reporting or recordkeeping requirements. ^a	63.654(a)	see 61.340 through 61.355
	Retain all information required to be reported for five years.	63.654(i)(4)	

^aSubpart CC required compliance with 40 CFR 61 subpart FF for wastewater streams that meet the applicability criteria in subpart FF. Subpart CC does not require any additional wastewater streams to comply with subpart FF and does not require any additional testing, monitoring, reporting or recordkeeping. Affected sources should already be complying with subpart FF requirements, and therefore will not need to make any changes to their current reporting and recordkeeping procedures.

Table 5-1. Requirements For Refineries Complying with the Equipment Leaks Standards in § 63.648 by Implementing 40 CFR Part 60, Subpart VVa

Item	Requirement	Section	Frequency
Testing	Method 21 shall be used to determine if equipment are leaking (leak definition = 10,000 ppmv THC for valves, pumps, heavy liquid leaks, and 500 ppmv THC for pressure relief valves and closed vent systems) and non-detectable emissions.	60.485(b), (c)	
Monitoring	<u>Using Method 21</u>		
	C light liquid pumps ^b	60.482-2(a) and (b)	1/month
	C gas or light liquid valves ^b	60.482-7(a) and (b)	1/month ^c
	C pressure relief valves	60.482-4(a) and (b)	after an overpressure release
	C closed vent systems		annually
	C pumps and valves in heavy liquid service, pressure relief devices, flanges, and other connectors	60.482-8	after a leak is observed ^d
	<u>Visual</u>	60.482-2(a)(2)	1/week
	C light liquid pumps		
	<u>Other</u>	60.482-3(d) and (e)	check daily or equip sensor with an alarm
	C a sensor to detect failure of compressor seal barrier fluid systems ^b		
	C monitor closed-vent systems and control devices to assure proper operation (site specifies procedures and frequency)	60.482-10(e) and (f)	no frequency specified
Reporting	<u>Initial Semi-Annual Report</u>	60.487(a) and (b)	initially, and as changes are made
	C demonstration that compressors are in hydrogen service		
	C demonstration that equipment are not in organic HAP service		
	C process unit identification		
	C number of valves, pumps, and compressors that are subject to the rule		

Table 5-1. Requirements For Refineries Complying with the Equipment Leaks Standards in § 63.648 by Implementing 40 CFR Part 60, Subpart VVa (Continued)

Item	Requirement	Section	Frequency
	<u>Semi-Annual Reports</u>	60.487(c)(1) through (3)	2 times/year
	<ul style="list-style-type: none"> C process unit identification C for each month during the semi-annual reporting period: <ul style="list-style-type: none"> - number of valves, pumps, and compressors for which leaks were detected - number of valves, pumps, and compressors for which leaks were not repaired as required - explanations of delays of repair and why a process unit shutdown was infeasible C dates of process unit shutdowns which occurred C revisions to items in the initial semi-annual report 		
	<u>Other reports</u>		
	C results of performance tests	60.487(e)	as needed
	C notification of performance tests 30 days before test	60.487(e)	as needed
	C notification that the owner or operator will comply with alternative standards for valves 90 days before implementing alternate provisions	60.487(d)	as needed
Recordkeeping	C identification numbers for equipment subject to the rule	60.486(e)(1)	initially, and as changes are made
	C identification numbers for equipment designated as having no detectable emissions, signed by the owner or operator	60.486(e)(2)	initially, and as changes are made
	C identification numbers for pressure relief devices	60.486(e)(3)	initially, and as changes are made
	C dates of each compliance test for pumps, valves, or compressors designed to operate at <500 ppmv above background, including: <ul style="list-style-type: none"> - background THC concentration - maximum Method 21 reading 	60.486(e)(4)	as needed
	C identification numbers for equipment in vacuum service	60.486(e)(5)	initially, and as changes are made

Table 5-1. Requirements For Refineries Complying with the Equipment Leaks Standards in § 63.648 by Implementing 40 CFR Part 60, Subpart VVa (Continued)

Item	Requirement	Section	Frequency
C	for valves designated as unsafe to monitor or difficult to monitor: <ul style="list-style-type: none"> - identification numbers - reasons for designation - plans for monitoring unsafe to monitor valves - schedule for monitoring difficult to monitor valves 	60.486(f)(1) and (2)	initially, and as changes are made
C	for valves complying with alternative standards: <ul style="list-style-type: none"> - schedule of monitoring - percent of valves found leaking during each monitoring period 	60.486(g)(1) and (2)	initially, and as changes are made each monitoring period
C	for compressors and light liquid valves equipped with seal system and barrier fluid: <ul style="list-style-type: none"> - design criterion for sensors that detect failure of seal system, barrier fluid system, or both - changes to design criterion and reasons for change 	60.486(h)(1) and (2)	initially, and as changes are made
C	analysis demonstrating compressor is in hydrogen service	63.654(d)(3)	initially, and as changes are made
C	analysis demonstrating the design capacity of the facility	60.486(i)(1)	initially, and as changes are made
C	statement listing the feed or raw materials and products from the facility	60.486(i)(2)	initially, and as changes are made
C	analysis demonstrating whether feed, raw materials, and products are heavy liquids or beverage alcohol	60.486(i)(2)	initially, and as changes are made
C	analysis demonstrating equipment are not in organic HAP service		initially, and as changes are made

Table 5-1. Requirements For Refineries Complying with the Equipment Leaks Standards in § 63.648 by Implementing 40 CFR Part 60, Subpart VVa (Continued)

Item	Requirement	Section	Frequency
C	for closed vent systems and control devices: <ul style="list-style-type: none"> - design specifications, detailed schematics, and piping and instrumentation diagrams - dates and descriptions of any changes in design specifications - description of parameters monitored to ensure proper control device operation - reasons why parameter was chosen - periods when the closed vent system and control devices were not operating as designed - dates of each start-up and shutdown of closed vent systems and control devices 	60.486(d)	initially, and as changes are made

Table 5-1. Requirements For Refineries Complying with the Equipment Leaks Standards in § 63.648 by Implementing 40 CFR Part 60, Subpart VVa (Continued)

Item	Requirement	Section	Frequency
C	for each leak detected, attach an identification marker with a number to the leaking component, and record: <ul style="list-style-type: none"> - instrument and operator identification numbers - equipment identification numbers - date leak was detected - dates of each attempt to repair leak - repair methods applied to repair leak - concentrations >10,000 ppmv for leaks detected after each repair attempt - reasons for delay of repair - name of person who decided leak could not be repaired.^e - expected date of successful repair if not repaired within 15 days of detection - dates of process unit shutdowns that occur while equipment is unrepaired - date of successful repair of leak 	60.486(b) and (c)	during each monitoring period

^aRefineries may choose to implement the modified HON equipment leaks standards as specified in § 63.648 and in 40 CFR 63 subpart H instead of the 40 CFR 60 subpart VV program. The testing, monitoring, recordkeeping, and reporting requirements of subpart H are similar to subpart VV. See the regulation for details.

^bDoes not apply if pump, valve, or compressor is demonstrated by Method 21 to operate at <500 ppm above background. Also, compressors in hydrogen service are exempt.

^cMonitoring frequency is reduced with good performance.

^dThere is no specified monitoring frequency, but if a leak is observed by visual, audible, olfactory, or other means, it must be monitored and repaired.

^eThis requirement reflects a recent amendment (63 FR 44135) to the petroleum refineries NESHAP.

Table 5-2. Requirements For Refineries Complying with the Equipment Leaks Standards in § 63.648 by Implementing 40 CFR Part 63, Subpart H

Item	Requirement	Section	Frequency
Testing	Method 21 shall be used to determine if equipment are leaking. Leak definitions for valves and pumps are listed in table 2 of subpart CC. In phase I the leak definition is 10,000 ppmv. Lower leak definitions phase in over time, to a level of 2,000 ppmv for pumps and 1,000 ppmv for valves. Leak definitions are 2,000 ppmv for heavy liquid pumps, 1,000 ppmv for heavy liquid valves, connectors, and instrumentation systems and 500 ppmv for closed-vent systems and pressure relief devices.	63.169, 63.165, 63.172, 63.180(b), (c); 63.648(c)-(i)	
Monitoring	<u>Using Method 21</u>		
	C light liquid pumps ^a	63.163(a) and (b)	once/month ^b
	C gas or light liquid valves ^a	63.648(c)(2)	once/month ^b
	C pressure relief valves	63.165(a) and (b)	after an overpressure release
	C closed vent systems	63.172(f)	annually ^c
	C pumps and valves in heavy liquid service, instrumentation systems, pressure relief devices	63.169 and 63.648(c)(5)	after a leak is observed ^d
	<u>Visual</u>		
	C light liquid pumps.	63.163(b)(3)	once/week
	<u>Other</u>		
	C a sensor to detect failure of compressor seal barrier fluid systems ^a	63.164(e) and (f)	check daily or equip sensor with an alarm
	C monitor closed-vent systems and control devices to assure proper operation (site specifies procedures and frequency)	63.172	no frequency specified
Reporting	<u>Notification of Compliance Status Report</u>	63.182(c)(1) and 63.654(d)	initially
	C process unit identification		
	C number of each equipment type that are subject to the rule		
	C method of compliance with the rule (e.g., monthly LDAR, equipped with mechanical seals)		
	C planned schedule for each phase of the requirements		

Table 5-2. Requirements For Refineries Complying with the Equipment Leaks Standards in § 63.648 by Implementing 40 CFR Part 63, Subpart H (Continued)

Item	Requirement	Section	Frequency
	<u>Semi-Annual Reports</u>	63.182(d)(1) and (2)	twice/year
	C process unit identification		
	C for the semi-annual reporting period:		
	- number of valves, pumps, compressors, and connectors for which leaks were detected		
	- the percent leaking valves, pumps, and connectors; and the total number of valves, pumps, and connectors monitored		
	- number of valves, pumps, compressors, and connectors for which leaks were not repaired as required		
	- explanations of delays of repair and why a process unit shutdown was infeasible		
	C results of monitoring pressure relief devices, closed vents systems, and compressors	63.182(d)(2)(xiv)	
	C revisions to items in the Notification of Compliance Status report	63.182(d)(4)	
Recordkeeping	C identification numbers for equipment subject to the rule (Connectors may be identified by area)	63.181(b)(1)(i)	initially, and as changes are made
	C schedule for monitoring connectors	63.181(b)(1)(ii)	initially, and as changes are made
	C identification numbers for compressors designated as operating < 500 ppmv	63.181(b)(2)(i)	initially, and as changes are made
	C identification numbers for equipment designated as having no detectable emissions	63.181(b)(2)(ii)	initially, and as changes are made
	C identification numbers for pressure relief devices, and pressure relief devices equipped with rupture disks	63.181(b)(3)	initially, and as changes are made
	C identification of instrumentation systems subject to the rule	63.181(b)(4)	initially, and as changes are made

Table 5-2. Requirements For Refineries Complying with the Equipment Leaks Standards in § 63.648 by Implementing 40 CFR Part 63, Subpart H (Continued)

Item	Requirement	Section	Frequency
C	for compressors and light liquid pumps equipped with seal system and barrier fluid: <ul style="list-style-type: none"> - design criterion for sensors that detect failure of seal system, barrier fluid system, or both - changes to design criterion and reasons for change 	63.181(b)(6)	initially, and as changes are made
C	for valves designated as unsafe to monitor or difficult to monitor, and connectors designated as unsafe to repair: <ul style="list-style-type: none"> - identification numbers - reasons for designation - plans for monitoring unsafe to monitor valves - schedule for monitoring difficult to monitor valves 	63.181(b)(7)	initially, and as changes are made
C	list of connectors and valves removed or added to a process unit if the net credits for the removed equipment are to be used	63.181(b)(8)	during each monitoring period
C	records of visual inspections	63.181(c)	during each monitoring period
C	for each leak detected, attach an identification marker with a number to the leaking component, and record: <ul style="list-style-type: none"> - instrument and operator identification numbers - equipment identification numbers - date leak was detected - date of first attempt to repair leak - date of successful repair of leak - maximum concentration measured after repair - reasons for delay of repair if not repaired within 15 days of detection - dates of process unit shutdowns that occur while equipment is unrepaired - identification of connectors disturbed, by list or area, since the last monitoring period 	63.181(d) and 63.162(f)	during each monitoring period

Table 5-2. Requirements For Refineries Complying with the Equipment Leaks Standards in § 63.648 by Implementing 40 CFR Part 63, Subpart H (Continued)

Item	Requirement	Section	Frequency
C	<p>dates and results of each compliance test for compressors designed to operate at <500 ppmv above background, and each monitoring event for pressure relief devices after an overpressure, including:</p> <ul style="list-style-type: none"> - background THC concentration - maximum Method 21 reading 	63.181(f)	as needed
C	<p>for closed vent systems and control devices:</p> <ul style="list-style-type: none"> - design specifications, detailed schematics, and piping and instrumentation diagrams - dates and descriptions of any changes in design specifications - description of parameters monitored to ensure proper control device operation - reasons why parameter was chosen - periods when the closed vent system and control devices were not operating as designed - dates of each start-up and shutdown of closed vent systems and control devices - records of inspections performed, including date and compliance status 	63.181(g)	initially, and as changes are made
C	records of quality improvement program, if applicable	63.181(h)	during each monitoring period
C	analysis demonstrating that equipment or process units are in heavy liquid service	63.181(i)	initially, and as changes are made
C	list of equipment in organic HAP service less than 300 hrs/yr	63.181(j)	initially, and as changes are made
C	analysis demonstrating compressor is in hydrogen service	63.654(d)(3)	initially, and as changes are made
C	list identifying valves designated as leakless	63.654(d)(4)	initially, and as changes are made

Table 5-2. Requirements For Refineries Complying with the Equipment Leaks Standards in § 63.648 by Implementing 40 CFR Part 63, Subpart H (Continued)

Item	Requirement	Section	Frequency
c	list identifying reciprocating pumps and compressors determined to be exempt from seal requirements in § 63.648(f) and (g)	63.654(d)(6)	initially, and as changes are made

^aDoes not apply if pump or valve is designated as leakless or if pump, valve, or compressor is demonstrated by Method 21 to operate at <500 ppm above background. Also, compressors in hydrogen service are exempt.

^bMonitoring frequency is reduced with good performance.

^cIf closed vent system is constructed of hard-piping, monitor by Method 21 initially, and perform visual monitoring annually.

^dThere is no specified monitoring frequency, but if a leak is observed by visual, audible, olfactory, or other means, it must be monitored and/or repaired.

Table 6-1. Requirements for Gasoline Loading Racks

Item	Requirement	Section	Frequency
Testing and Monitoring	Comply with testing and monitoring requirements found in sections 63.421, 63.422(a) through (d), 63.425(a) through (c), 63.425(e) through (h), 63.427(a) and (b), and 63.428(b), (c), (g)(1) or (h)(1) through (h)(3) of 40 CFR part 63, subpart R. There are no additional testing or monitoring requirements.	63.650(a)	see referenced sections
Reporting and Recordkeeping	Comply with reporting and recordkeeping requirements in 63.428(b) and (c), (g)(1), and (h)(1) through (h)(3) of 40 CFR part 63, subpart R. There are no additional reporting or recordkeeping requirements.	63.654(b)	see referenced sections
	Submit the initial notification report required in 63.428(a) with the Notification of Compliance Status for the refinery 150 days after the compliance date. ^a	63.654(f)	Once
	Retain all information required to be reported for five years.	63.654(i)(4)	

^a This requirement reflects a recent amendment (63 FR 44135) to the petroleum refineries NESHAP.

Table 7-1. Requirements for Marine Vessel Loading Operations

Item	Requirement	Section	Frequency
Testing and Monitoring	Comply with testing and monitoring requirements found in sections 63.560 through 63.657 of 40 CFR part 63, subpart Y. There are no additional testing or monitoring requirements.	63.651(a)	see referenced sections
Reporting and Recordkeeping	Comply with recordkeeping and reporting requirements sections 63.566 and 63.567(a) and 63.567(c) through (i) 40 CFR part 63, subpart Y. There are no additional reporting or recordkeeping requirements.	63.654(c)	see referenced sections
	The Initial Notification Report under section 63.567(b) is not required.	63.651(c)	
	Retain all information required to be reported for five years.	63.654(i)(4)	